

## ABSTRACT

A network topology generation method is provided. The network topology generation method can reduce a network delay fairly and minimally, upon generating a new network topology, by considering a network condition in a physical layer. The network topology generation method includes establishing a virtual connection between the new node and each of the plurality of nodes; calculating an average metric value of routes from the new node to the plurality of nodes via each of the virtual connections; and establishing a connection between the new node and the node to which the virtual connection having the smallest average metric value is established, so that the new node joins the network.